

Patent claims

1. A motor vehicle, the passenger cell of which is integrated into the rest of the vehicle as a separate unit, having a device, by means of which, in the event of a crash, the passenger cell can be moved in the longitudinal direction of the vehicle relative to the rest of the vehicle and at the same time upward, via guide surfaces, which are arranged on the rest of the vehicle and against which the passenger cell bears, characterized in that the device is designed in such a manner that the passenger cell (2) can be moved in the opposite direction to the impact.

2. The motor vehicle as claimed in claim 1, characterized in that the device contains at least one sliding element (29), which is arranged along the longitudinal direction of the vehicle, can be actuated in the longitudinal direction of the vehicle by the impact force and is connected at one end to the passenger cell (2) over the entire crash path and at the other end bears an impact receptacle (26).

3. The motor vehicle as claimed in claim 2, characterized in that the sliding element (29) is fastened to a vehicle structure, which is situated essentially below the passenger cell (2) and has a section (12) which can be pushed together in the longitudinal direction of the vehicle and is moveable relative to the sliding element (29).

4. The motor vehicle as claimed in claim 3, characterized in that the section (12) is part of a longitudinal member (13) of the vehicle structure, on which the passenger cell (2) rests.

5. The motor vehicle as claimed in either of claims 3 and 4, characterized in that the section (12) is folded in the manner of a concertina, with it buckling in the transverse direction of the vehicle.

6. The motor vehicle as claimed in either of claims 3 and 4, characterized in that the vehicle structure comprises first components (18) and second components (19), the first components (18) being of hollow design and engaging around the second, with an overlapping zone (20) being formed and with an empty distance being left free, over which the second components (19) can be displaced in the first components (18) in the event of a crash, and in that the second components (19) with the first components (18) are fastened to one another in the zone (20) by a connection which can be sheared off in the crash.

7. The motor vehicle as claimed in claim 2, characterized in that the sliding element (29) is fitted to the front end and/or rear end (10, 11), and in that the vehicle structure situated below the passenger cell (2) and the adjacent walls (27, 28) of the front end or rear end (10, 11) are designed in such a manner that, in the event of a crash, the structure penetrates the walls (27, 28).

8. The motor vehicle as claimed in one of claims 1 to 7, characterized in that the impact receptacle (26) of the sliding element (29) is mounted upstream of the passenger cell (2).

9. The motor vehicle as claimed in one of claims 2 to 8, characterized in that the sliding element (29) is operatively connected to a cable pull (34), which is fastened to the

passenger cell (2) and is guided via deflection pulleys (35-39, 42-44) arranged on the rest of the vehicle, in such a manner that the passenger cell (2) is pulled upward by means of the cable pull (34) along the guide surfaces (15) in the opposite direction to the impact during a crash-induced displacement of the sliding element (29) relative to the passenger cell (2).

10. The motor vehicle as claimed in claim 9, characterized in that the cable pull (34) runs from one longitudinal side of the vehicle to the other, with the two ends (41, 45) of the cable pull (34) being fitted on the passenger cell (2) on different longitudinal sides of the vehicle.

11. The motor vehicle as claimed in one of claims 1 to 10, characterized in that the passenger cell (2) rests at the front and rear on the guide surfaces (15) which are parallel to one another and face obliquely upward to the impact direction.

12. The motor vehicle as claimed in claim 1, characterized in that the device contains a crash sensor and a compression or tension spring which is supported, on the one hand, on a splash wall (3) or back wall (4) of the passenger cell (2) and, on the other hand, on a stop formed on the rest of the vehicle, and in that the passenger cell (2) is locked to the rest of the vehicle, with the crash sensor canceling the locking after detection of an impact.

13. The motor vehicle as claimed in claim 1, characterized in that the device contains a crash sensor and a pyrotechnic device which is arranged between a splash wall (3), which faces the impact direction, or back wall (4) of the passenger cell (2) and an opposite wall (27, 28) of the rest of the vehicle, the crash

sensor, after detection of an impact, using an electric signal to activate an igniter of the device that releases an explosive pressure.

14. The motor vehicle as claimed in one of claims 1 to 13, characterized in that the passenger cell (2) rests on rubber bearings (23) which are arranged on the rest of the vehicle.